

Appendix F – Best Management Practices Applied to the Flagtail Fire Recovery Project

Excerpts from USDA Forest Service. 1988. General Water Quality Best Management Practices. PNW.

T-1 Title: Timber Sale Planning Process

Objective: To introduce water quality and hydrologic considerations into the timber sale planning process.

T-2 Title: Timber Harvest Unit Design

Objective: To ensure that timber harvest unit design will secure favorable conditions of water flow, water quality and fish habitat.

T-3 Title: Use of Erosion Potential Assessment for Timber Harvest Unit Design

Objective: To prevent downstream water quality degradation by the timely identification of areas with high erosion potential and adjustment of harvest unit design.

T-4 Title: Use of Sale Area Maps for Designating Water Quality Protection Needs

Objective: To delineate the location of protection areas and available water sources as a guide for both the Purchaser and the Sale Administrator, and to ensure their recognition and proper consideration and protection on the ground.

T-5 Title: Limiting the Operating Period of Timber Sale Activities

Objective: To ensure that the Purchaser conducts operations in a timely manner, within the time period specified in the Timber Sale Contract (TSC).

T-7 Title: Streamside Management Unit Designation

Objective: To designate a riparian area or zone along streams and wetlands where prescriptions are made that will minimize potential adverse effects of nearby logging and related land disturbance activities on water quality and beneficial uses.

T-8 Title: Streamcourse Protection (Implementation and Enforcement)

Objective: (1) To protect the natural flow of streams, (2) to provide unobstructed passage of stormflows, and (3) to prevent sediment and other pollutants from entering streams.

T-9 Title: Determining Tractor Loggable Ground

Objective: To protect water quality from degradation caused by tractor logging ground disturbances.

T-10 Title: Log Landing Location

Objective: To locate landings in such a way as to minimize creation of hazardous watershed conditions.

T-11 Title: Tractor Skid Trail Location and Design

Objective: To minimize the area compacted, erosion, and runoff water.

T-12 Title: Suspended Log Yarding in Timber Harvesting

Objective: (1) To protect soils from excessive disturbance, and (2) to maintain the integrity of the SMU and other sensitive watershed areas.

T-13 Title: Erosion Prevention and Control Measures During Timber Sale Operations

Objective: To ensure that the Purchaser's operations shall be conducted to minimize soil erosion.

T-14 Title: Revegetation of Areas Disturbed by Harvest Activities

Objective: To establish a vegetative cover on disturbed sites to prevent erosion and sedimentation.

T-15 Title: Log Landing Erosion Prevention and Control

Objective: To reduce the impacts of erosion and subsequent sedimentation, on log landings, by use of mitigating measures.

T-16 Title: Erosion Control on Skid Trails

Objective: To protect water quality by minimizing erosion and sedimentation derived from skid trails.

T-17 Title: Meadow Protection During Timber Harvesting

Objective: To avoid locating roads, landings, and skid trails in meadows.

T-18 Title: Erosion Control Structure Maintenance

Objective: To ensure that constructed erosion control structures are stabilized and working.

T-19 Title: Acceptance of Timber Sale Erosion Control Measures Before Sale Closure

Objective: To assure the adequacy of required erosion control work on timber sales.

T-20 Title: Reforestation

Objective: To reforest all suitable land harvested within five years after the regeneration cut and to promptly reforest all other suitable areas not harvested but in need of reforestation.

T-21 Title: Servicing and Refueling of Equipment

Objective: To prevent pollutants such as fuels, lubricants, bitumens, raw sewage, wash water and other harmful materials from being discharged into or near rivers, streams and impoundments or into natural or man-made channels leading thereto.

T-22 Title: Modification of the TSC

Objective: To modify the TSC if new circumstances or conditions arise and indicate that the timber sale will irreversibly damage soil, water or watershed values.

R-1 Title: General Guidelines for the Location and Design of Roads

Objective: To locate and design roads with minimal resource damage.

R-2 Title: Erosion Control Plan

Objective: To limit and mitigate erosion and sedimentation through effective planning prior to initiation of road construction activities and through effective contract administration during construction.

R-3 Title: Timing of Construction Activities

Objective: To minimize erosion by conducting road construction operations during minimal runoff periods.

R-4 Title: Road Slope Stabilization (Planning)

Objective: To reduce sedimentation by minimizing erosion from road slopes and minimizing the chances for slope failures along roads.

R-5 Title: Road Slope and Waste Area Stabilization (Preventive)

Objective: To minimize soil erosion from cut slopes, fill slopes, and waste areas.

R-6 Title: Dispersion of Subsurface Drainage Associated with Roads

Objective: To minimize the possibilities of roadbed and cut or fill slope failure and the subsequent production of sediment.

R-7 Title: Control of Surface Road Drainage Associated with Roads

Objective: (1) To minimize the erosive effects of water concentrated by road drainage features, (2) to disperse runoff from or through the road, and (3) to minimize the sediment generated from the road.

R-8 Title: Constraints Related to Pioneer Road Construction

Objective: To minimize sediment production and mass wasting problems associated with pioneer road construction.

R-9 Title: Timely Erosion Control Measures on Incomplete Roads and Stream Crossing Projects

Objective: To minimize erosion of and sedimentation from disturbed ground on incomplete projects.

R-10 Title: Construction of Stable Embankments (Fills)

Objective: To construct embankments with materials and methods which minimize the possibility of failure and subsequent water quality degradation.

R-11 Title: Control of Sidecast Material

Objective: To minimize sediment production originating from sidecast material during road construction or maintenance.

R-13 Title: Diversion of Flows Around Construction Sites

Objective: (1) To ensure that all stream diversions are carefully planned, (2) to minimize downstream sedimentation, and (3) to restore stream channels to their natural grade, condition and alignment as soon as possible.

R-14 Title: Bridge and Culvert Installation and Protection of Fisheries

Objective: To minimize sedimentation and turbidity resulting from excavation for in-channel structures.

R-15 Title: Disposal of Right-of-Way and Roadside Debris

Objective: (1) To ensure that debris generated during road construction is kept out of streams and debris from subsequently obstructing channels, and (2) to prevent debris dams which obstruct fish passage, or which could result in downstream damage from high water flow surges after dam failure.

R-17 Title: Water Source Development Consistent With Water Quality Protection

Objective: To supply water for roads and fire protection while maintaining existing water supply.

R-18 Title: Maintenance of Roads

Objective: To maintain roads in a manner which provides for water quality protection by controlling the placement of waste material, keeping drainage facilities open, and by repairing ruts and failures to reduce sedimentation and erosion.

R-20 Title: Traffic Control During Wet Periods

Objective: (1) To reduce road surface damage and rutting of roads, and (2) to lessen sediment washing from damaged road surfaces.

R-21 Title: Snow Removal Controls to Avoid Resource Damage

Objective: To minimize the impact of melt water on road surfaces and embankments and to consequently reduce the probability of sediment production resulting from snow removal operations.

R-22 Title: Restoration of Borrow Pits and Quarries

Objective: To minimize sediment production from borrow pits and quarry sites.

R-23 Title: Obliteration of Temporary Roads and Landings

Objective: To reduce sediment and restore productivity of the land at the completion of intended use.

F-1 Title: Fire and Fuel Management Activities

Objective: An objective of fire management activities is to reduce the potential public and private losses which could result from wildfire and/or subsequent flooding and erosion, by reducing the frequency, intensity and destructiveness of wildfire.

F-2 Title: Consideration of Water Quality in Formulating Prescribed Fire Prescriptions

Objective: To provide for water quality protection while achieving the management objectives through the use of prescribed fire.

F-3 Title: Protection of Water Quality During Prescribed Fire Operations

Objective: To maintain soil productivity, minimize erosion, and prevent ash, sediment, nutrients, and debris from entering water bodies.

W-3 Title: Protection of Wetlands

Objective: To avoid adverse water quality impacts associated with destruction or modification of wetlands.

W-4 Title: Oil and Hazardous Substance Spill Contingency Prevention Control & Countermeasure (SPCC) Plan

Objective: To prevent contamination of waters from accidental spills.

W-5 Title: Cumulative Watershed Effects

Objective: To protect the beneficial uses of water and streams from the cumulative effects of multiple land management activities which may result in adverse (degraded) water quality or stream habitat conditions.

W-8 Title: Management by Closure to Use (Seasonal, Temporary, and Permanent)

Objective: To exclude activities that could result in damage to either resources or improvements, such as roads and trails, resulting in impaired water quality.

REC-4 Title: Control of Refuse Disposal

Objective: To protect surface and subsurface soil and water resources from nutrients, bacteria, and chemicals associated with solid waste disposal.

REC-5 Title: Assuring Proper Sanitation and Water Supplies for Special Use Permit Facilities

Objective: To protect the quality of water both consumed and discharged from facilities under Special Use Permit.

VM-1 Title: Slope Limitations for Tractor Operation

Objective: To reduce gully and sheet erosion and associated sediment production by limiting tractor use.

VM-2 Title: Tractor Operation Excluded from Wetlands and Meadows

Objective: To limit turbidity and sediment production resulting from compaction, rutting, runoff concentration, and subsequent erosion.

VM-3 Title: Revegetation of Surface Disturbed Areas

Objective: To protect water quality by minimizing soil erosion through the stabilizing influence of vegetation.

VM-4 Title: Soil Moisture Limitations for Tractor Operation

Objective: The Objective of this measure is to prevent compaction, rutting, and gullyng and production of sediment and turbidity.

RM-2 Title: Controlling Livestock Numbers and Season of Use

Objective: To maintain and protect soil and water resources through management of livestock numbers and season of use.